

217728US0CONT

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :
SHUKO OKUI ET AL : ATTN: APPLICATION DIVISION

SERIAL NO: NEW U.S. APPLICATION :
FILED: HEREWITH :
FOR: PYRAZOLE DERIVATIVE,
PRODUCTION PROCESS
THEREOF, AND PEST CONTROL
AGENT CONTAINING THE
SAME AS ACTIVE
INGREDIENT

PRELIMINARY AMENDMENT

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

SIR:

Prior to examination on the merits, please amend the above-identified application as follows:

IN THE SPECIFICATION

Page 16, please replace the paragraph beginning at line 9 with the following:

In the reaction, $R_1S(O)_nX^1$ is used in an amount of 0.5 to 10.0 molar equivalents, preferably 0.8 to 5 molar equivalents to the compound represented by the general formula (2) (wherein R^5 is hydrogen atom) and the reaction is carried out at 0°C to 150°C, preferably 0°C to 100°C. The solvent for use in the reaction includes aromatic hydrocarbons such as benzene, toluene, or xylene; ketones such as acetone or methyl ethyl ketone; halogenated

hydrocarbons such as chloroform or methylene chloride; polar solvents such as tetrahydrofuran or N,N-dimethylformamide. Particularly, toluene and dichloromethane are preferred.

Page 59, please replace the paragraph beginning at line 20 with the following:

(Example 3) Production of 1-(2,6-dichloro-4-trifluoromethylphenyl)-4-trifluoromethylsulfinyl-5-(1-oxy-pyridin-3-ylmethylamino)pyrazole-3-carbonitrile

(Compound No. 14)

Please replace the paragraph bridging pages 65 and 66 with the following:

In 350 ml and 110 ml of acetonitrile were dissolved 7.89 g (8.88 mmol) of bis(1-(2,6-dichloro-4-trifluoromethylphenyl)-3-carbonitrile-5-(pyrazin-2-ylmethylamino)pyrazol-4-yl)-disulfide, 5.44 g (31.6 mmol) of potassium trifluoromethanesulfinate, and 0.40 g (1.24 mmol) of dioxobis(acetylacetonato)molybdenum, and then 3.4 ml (27.2 mmol) of 80% t-butyl hydroperoxide solution was added dropwise thereto at room temperature. Furthermore, every 4 hours, the addition of 5.44 g (31.6 mmol) of potassium trifluoromethanesulfinate and 3.4 ml (27.2 mmol) of 80% t-butyl hydroperoxide solution was repeated twice, followed by stirring for 15 hours at room temperature. Then, 5.44 g (31.6 mmol) of potassium trifluoromethanesulfinate and 3.4 ml (27.2 mmol) of 80% t-butyl hydroperoxide solution were again added, followed by stirring for 6 hours. After removal of precipitated pale brown crystals by filtration, acetonitrile was removed from the filtrate by distillation under reduced pressure and ethyl acetate was added, followed by extraction. After washing of the organic layer with water, the solvent was removed under reduced pressure and the residue was subjected to a column chromatographic purification (Hex/AcOE₂ = 5/2) to obtain 0.88 g (1.7 mmol) of pale yellow crystals of 1-(2,6-dichloro-4-trifluoromethylphenyl)-4-trifluoromethylsulfinyl-5-(pyrazin-2-ylmethylamino)pyrazole-3-carbonitrile in 9.6% yield.

Please replace the paragraph bridging pages 66 and 67 with the following:

Under a nitrogen atmosphere, 10.1 mg (0.24 mmol) of sodium borohydride was added to a methanol (1.5 ml) solution of 50 mg (0.11 mmol) of 1-(2,6-dichloro-4-trifluoromethylphenyl)-4-thiocyanato-5-(pyrazin-2-ylmethylamino)pyrazole-3-carbonitrile, followed by stirring at room temperature for 2 hours. After removal of the solvent from the reaction mixture by distillation under reduced pressure, 2 ml of DMF was added under nitrogen. After cooling in a dry ice-acetone bath, a DMF (0.5 ml) solution of 54.5 mg (0.11 mmol) of MEC-12, a trifluoromethylating agent manufactured by Daicel Chemical Industries, Ltd. was added thereto. After 1 hour of stirring at room temperature, ethyl acetate and water were added, followed by extraction. The organic layer was subjected to an LC analysis to observe the formation of 1-(2,6-dichloro-4-trifluoromethylphenyl)-4-trifluoromethylsulfenyl-5-(pyrazin-2-ylmethylamino)pyrazole-3-carbonitrile in 41.7 area% yield.

Page 67, please replace the text at lines 20-23 with the following:

No. 7

¹HNMR (CDCl₃): 4.66 (2H, d), 5.27 (1H, brs), 5.30 (1H, s), 5.61 (1H, s), 7.76 (2H, s), 8.41 (1H, d), 8.49 (1H, d), 8.54 (1H, s)

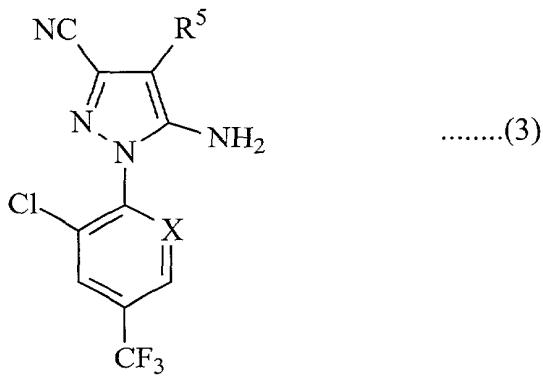
Page 68, please replace the text at lines 16-18 with the following:

No. 15

¹HNMR (CDCl₃): 4.84 (2H, d), 6.35 (1H, brs), 7.31 (3H, m), 7.77 (2H, s), 8.15 (1H, m)

IN THE CLAIMS

16. (Amended) A process for producing a pyrazole derivative of the general formula (2) (wherein Y is Y-3 and R² is hydrogen atom), which comprises treating a pyrazole derivative of the following general formula (3) (wherein X has the same meaning as in the general formula (1)) with a nitrogen-containing six-membered heterocyclic compound represented by A-CH(-R³)-X⁵ (wherein A and R³ have the same meaning as in the general formula (1) and X⁵ represents a halogen atom, a lower alkylsulfonyloxy group, or an arylsulfonyloxy group).



DISCUSSION OF THE AMENDMENT

The specification has been amended to correct obvious errors. Claim 16 has been amended to simply indicate that R³ has the same meaning as in general formula (1).

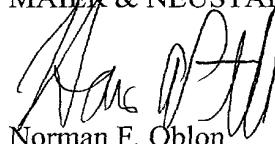
No new matter is believed to have been added. Claims 1-20 remain pending in the application.

REMARKS

The application is ripe for examination on the merits. An early examination is respectfully solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Norman F. Oblon
Attorney of Record
Registration No. 24,618

Harris A. Pitlick
Registration No. 38,779



22850

(703) 413-3000
Fax #: (703)413-2220
NFO:HAP:kst

I:\atty\HAP\217728us-pr.wpd

Marked-Up Copy
Serial No:
NEW APPLICATION
Amendment Filed on:
DECEMBER 28, 2001

IN THE SPECIFICATION

Page 16, please replace the paragraph beginning at line 9 with the following:

--In the reaction, $[R_1S(O)_nX_1] R_1S(O)_nX^1$ is used in an amount of 0.5 to 10.0 molar equivalents, preferably 0.8 to 5 molar equivalents to the compound represented by the general formula (2) (wherein R^5 is hydrogen atom) and the reaction is carried out at 0°C to 150°C, preferably 0°C to 100°C. The solvent for use in the reaction includes aromatic hydrocarbons such as benzene, toluene, or xylene; ketones such as acetone or methyl ethyl ketone; halogenated hydrocarbons such as chloroform or methylene chloride; polar solvents such as tetrahydrofuran or N,N-dimethylformamide. Particularly, toluene and dichloromethane are preferred.--

Page 59, please replace the paragraph beginning at line 20 with the following:

--(Example 3) Production of [1-(2,6-dichloro-4-trifluoromethylphenyl)-4-methylsulfonyl-5-(1-oxy-pyridin-3-ylmethylamino)pyrazole-3-carbonitrile]
1-(2,6-dichloro-4-trifluoromethylphenyl)-4-trifluoromethylsulfonyl-5-
(1-oxy-pyridin-3-ylmethylamino)pyrazole-3-carbonitrile (Compound No. 14)--

Please replace the paragraph bridging pages 65 and 66 with the following:

--In 350 ml and 110 ml of acetonitrile were dissolved 7.89 g (8.88 mmol) of bis(1-(2,6-dichloro-4-trifluoromethylphenyl)-3-carbonitrile-5-(pyrazin-2-ylmethylamino)pyrazol-4-yl)-disulfide, 5.44 g (31.6 mmol) of potassium [trifluoromethylsulfinate]

trifluoromethanesulfinate, and 0.40 g (1.24 mmol) of dioxobis(acetylacetone)molybdenum, and then 3.4 ml (27.2 mmol) of 80% t-butyl hydroperoxide solution was added dropwise thereto at room temperature. Furthermore, every 4 hours, the addition of 5.44 g (31.6 mmol) of potassium [trifluoromethylsulfinate] trifluoromethanesulfinate and 3.4 ml (27.2 mmol) of 80% t-butyl hydroperoxide solution was repeated twice, followed by stirring for 15 hours at room temperature. Then, 5.44 g (31.6 mmol) of potassium [trifluoromethylsulfinate] trifluoromethanesulfinate and 3.4 ml (27.2 mmol) of 80% t-butyl hydroperoxide solution were again added, followed by stirring for 6 hours. After removal of precipitated pale brown crystals by filtration, acetonitrile was removed from the filtrate by distillation under reduced pressure and ethyl acetate was added, followed by extraction. After washing of the organic layer with water, the solvent was removed under reduced pressure and the residue was subjected to a column chromatographic purification (Hex/AcOE₂ = 5/2) to obtain 0.88 g (1.7 mmol) of pale yellow crystals of 1-(2,6-dichloro-4-trifluoromethylphenyl)-4-trifluoromethylsulfenyl-5-(pyrazin-2-ylmethylamino)pyrazole-3-carbonitrile in 9.6% yield.--

Please replace the paragraph bridging pages 66 and 67 with the following:

--Under a nitrogen atmosphere, 10.1 mg (0.24 [ml] mmol) of sodium borohydride was added to a methanol (1.5 ml) solution of 50 mg (0.11 mmol) of 1-(2,6-dichloro-4-trifluoromethylphenyl)-4-thiocyanato-5-(pyrazin-2-ylmethylamino)pyrazole-3-carbonitrile, followed by stirring at room temperature for 2 hours. After removal of the solvent from the reaction mixture by distillation under reduced pressure, 2 ml of DMF was added under nitrogen. After cooling in a dry ice-acetone bath, a DMF (0.5 ml) solution of 54.5 mg (0.11 mmol) of MEC-12, a trifluoromethylating agent manufactured by Daicel Chemical Industries, Ltd. was added thereto. After 1 hour of stirring at room temperature, ethyl acetate and water were added, followed by extraction. The organic layer was subjected to an LC

analysis to observe the formation of 1-(2,6-dichloro-4-trifluoromethylphenyl)-4-trifluoromethylsulfenyl-5-(pyrazin-2-ylmethylamino)pyrazole-3-carbonitrile in 41.7 area% yield.--

Page 67, please replace the text at lines 20-23 with the following:

--No. 7

^1H NMR (CDCl₃): 4.66 (2H, d), 5.27 (1H, [b] brs), 5.30 (1H, s), 5.61 (1H, s), 7.76 (2H, s), 8.41 (1H, d), 8.49 (1H, d), 8.54 (1H, s)--

Page 68, please replace the text at lines 16-18 with the following:

--No. 15

^1H NMR (CDCl₃): 4.84 (2H, d), 6.35 (1H, [b] brs), 7.31 (3H, m), 7.77 (2H, s), 8.15 (1H, m)--

IN THE CLAIMS

--16. (Amended) A process for producing a pyrazole derivative of the general formula (2) (wherein Y is Y-3 and R² is hydrogen atom), which comprises treating a pyrazole derivative of the following general formula (3) (wherein X has the same meaning as in the general formula (1)) with a nitrogen-containing six-membered heterocyclic compound represented by A-CH(-R³)-X⁵ (wherein A [has] and R³ have the same meaning as in the general formula (1) and X⁵ represents a halogen atom, a lower alkylsulfonyloxy group, or an arylsulfonyloxy group).

